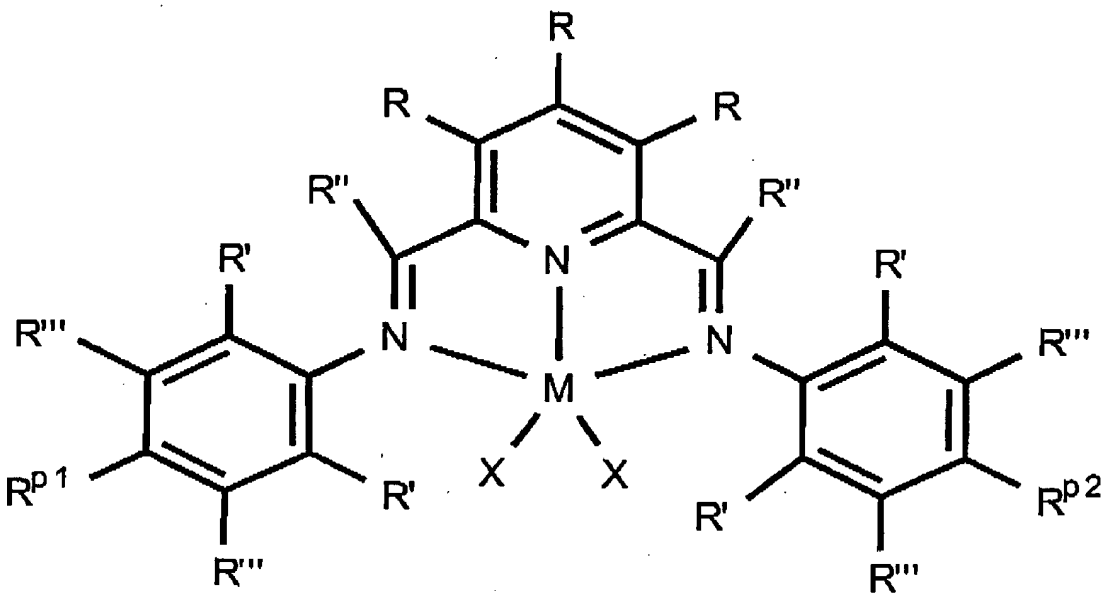
IN THE CLAIMS:

Please amend the claims as follows:

1. (Previously presented) A composition comprising the product of combining, in the presence of a free radical initiator, a catalyst precursor and at least one monomer wherein the monomer and the catalyst precursor are polymerizable by free-radical polymerization and wherein the catalyst precursor compound is represented by the formula:



wherein

(a) each X is an abstractable ligand;

(b) each R, R', R'', R''', R^{p1} and R^{p2} is independently hydrogen or a hydrocarbyl group provided at least one of R^{p1}, R^{p2}, and R''' can be polymerized by a free radical initiator;

(c) M is a Group-4-11 metal; and

(d) at least one of R', R", R'", R^{P1} and R^{P2} is an allyl.

2. (Previously presented) The composition of claim 1 wherein each R, R', R", R'", R^{P1} and R^{P2} is independently hydrogen or a C_1-C_{50} hydrocarbyl group.

3. (Currently amended) The composition of claim 2 wherein

(a) each R' is independently one of hydrogen, methyl, ethyl, propyl, butyl, cyclohexyl, or phenyl; and

(b) R^{P1} and R^{P2} are independently hydrogen, methyl, ethyl, propyl, butyl, cyclohexyl, phenyl, vinyl, allyl, or ω-olefin provided that at least one of R^{P1} and R^{P2} can be polymerized by a free radical initiator.

4. (Previously presented) The composition of claim 2 wherein

(a) each R is independently one of hydrogen, allyl, methyl, or phenyl;

(b) each R" is independently one of hydrogen, methyl, or phenyl;

(c) each R'" is independently one of hydrogen, methyl, isopropyl, tertiary butyl, or phenyl.

5. (Previously presented) The composition of claim 3 wherein

(a) each R is independently one of hydrogen, allyl, methyl, or phenyl;

(b) each R" is independently one of hydrogen, methyl, or phenyl;

(c) each R'" is independently one of hydrogen, methyl, isopropyl, tertiary butyl, or phenyl.

6. (Currently amended) The composition of claim 3 wherein M is ~~selected from~~ a Group 8 or 9 transition metal.

7. (Previously presented) The composition of claim 6 wherein M is Fe or Co.

8. (Previously presented) The composition of claim 3 wherein the abstractable ligands, X, are independently hydride radicals, hydrocarbyl radicals, or hydrocarbyl-substituted organometalloid radicals.

9. (Previously presented) The composition of claim 8 wherein the two abstractable ligands, X, join to form a 3-to-40-atom metallacycle ring.

10. (Previously presented) The composition of claim 8 wherein the abstractable ligands, X, are independently halogen, alkoxide, aryloxide, amide, or phosphide radicals.

11. (Previously presented) The composition of matter of claim 10 wherein abstractable ligands, X, are independently chloride, bromide, iodide, methoxy, ethoxy, propoxy, butoxy, dimethylamino, diethylamino, methylethylamino, phenoxy, and benzoxy.

12. (Original) The composition of matter of claim 11 wherein at least one abstractable ligand is chloride.

13. (Previously presented) The composition of claim 3 wherein the one or more monomers comprise styrene, vinyl styrene, an alkyl styrene, isobutylene, isoprene, or butadiene.

14. (Original) The composition of claim 13 wherein the one or more monomers comprise styrene.

15. (Currently amended) The composition of claim 3 wherein the free radical initiator is ~~selected from~~ an azo initiator or ~~peroxides~~ peroxide.

16. (Previously presented) The composition of claim 3 wherein the free radical initiator is dialkyldiazenes, hyponitrites, diacyl peroxides, dialkyl peroxydicarbonates, peresters, alkyl hydroperoxides, dialkyl peroxides, or inorganic peroxides.

17. (Previously presented) The composition of claim 3 wherein the free radical initiator is selected from the group consisting of 2,2'-azobis(2-methylpropanenitrile), 1,1-azobis(1-cyclohexanenitrile), 4,4'-azobis(4-cyanovaleric acid), triphenylmethylazobenzene, di-t-butyl hyponitrite, dicumyl hyponitrite, dibenzoyl peroxide, didodecanoyl peroxide, diacetyl peroxide, diisopropyl ester, dicyclohexyl ester, cumyl hydroperoxide, t-butyl hydroperoxide, dicumyl peroxide, di-t-butyl peroxide, hydrogen peroxide, and persulfate initiators.

18 (Original) A catalyst system comprising the reaction product of the composition of claim 1 and an activator.

19. (Original) The catalyst system of claim 18 wherein the activator is selected from alumoxanes, aluminum alkyls, alkyl aluminum halides, alkylaluminum alkoxides, discrete ionic activators, and Lewis acid activators.

20. (Original) The catalyst system of claim 19 wherein the activator is selected from methylalumoxane, modified methylalumoxane, ethylalumoxane, trimethyl aluminum, triethyl aluminum, triisopropyl aluminum, diethyl aluminum chloride, alkylaluminum alkoxides, ammonium borate salts, phosphonium borate salts, triphenyl carbenium borate salts, ammonium aluminate salts, phosphonium aluminate salts, triphenyl carbenium aluminate salts, trisarylborane acids, and polyhalogenated heteroborane anions.

21. (Previously presented) A method to polymerize olefin comprising contacting an olefin and the composition of any of claims 1-17.

22. (Original) The catalyst system of any of claims 18, 19 or 20 and an olefin.